

## PATENT ABSTRACTS OF JAPAN

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(21)Application number : 2001-333562 (71)Applicant : CITIZEN ELECTRONICS CO LTD

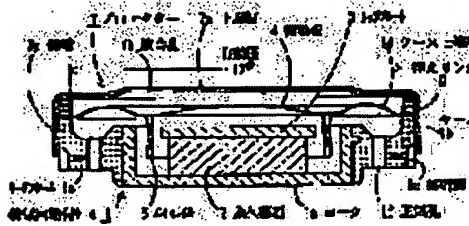
(22)Date of filing : 30.10.2001 (72)Inventor : FURUYA MASAHIRO

### (54) SPEAKER AND ITS MANUFACTURING METHOD

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a structure of a speaker where an effective diameter of a diaphragm is increased and of the speaker where the assembling work can be simplified and to provide its manufacturing method.

SOLUTION: This invention provides the structure of the speaker and its assembling method such that a retainer ring (not required when a protector has a step difference at its surrounding equivalently acting like the retainer ring), a voice coil attached diaphragm, and a magnetic circuit attached case are sequentially put in a protector of a deep casing shape, a



side wall of the protector and a side face of a case are adhered and the outer circumference of the diaphragm is clamped by an upper end of a ring shaped case and the retainer ring (or the step difference of the protector).

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